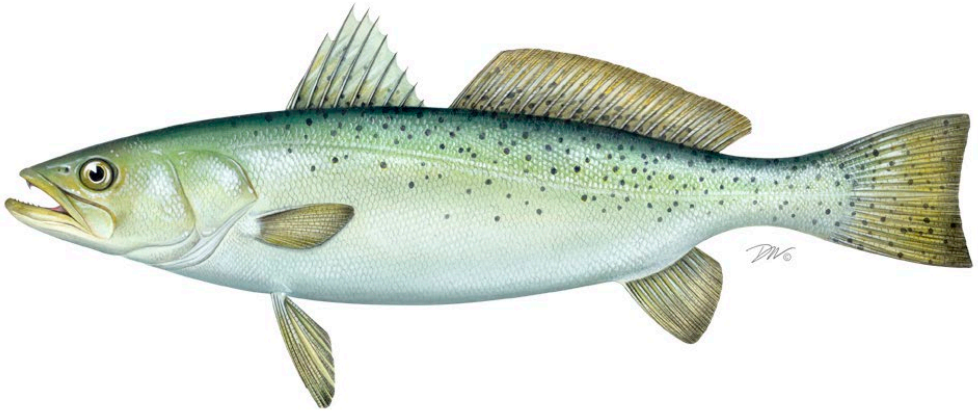
ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR

SPOTTED SEATROUT
(Cynoscion nebulosus)

2021 FISHING YEAR



Prepared by the Plan Review Team
Approved October 2022

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

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I. Status of the Fishery Management Plan

Date of FMP Approval:	Original FMP – October 1984
Amendments:	Amendment 1 – November 1991 Omnibus Amendment to Spanish Mackerel, Spot, and Spotted Seatrout -- August 2011
Management Area:	The Atlantic coast distribution of the resource from Maryland through the east coast of Florida
Active Boards/Committees:	South Atlantic State/Federal Fisheries Management Board; Spotted Seatrout Plan Review Team; South Atlantic Species Advisory Panel

The Atlantic States Marine Fisheries Commission (ASMFC) adopted the Fishery Management Plan (FMP) for spotted seatrout in 1984. The ISFMP Policy Board approved Amendment 1 to the FMP in November 1991. In August 2011, the South Atlantic State/Federal Management Board approved the Omnibus Amendment to the Spanish Mackerel, Spot, and Spotted Seatrout FMPs, bringing the Spotted Seatrout FMP under the authority of the Atlantic Coastal Fisheries Cooperative Management Act (Act, 1993) and the ASMFC Interstate Fishery Management Plan Charter (1995). The management unit is comprised of the states of Maryland through Florida.

The goal of the management plan is "to perpetuate the spotted seatrout resource in fishable abundance throughout its range and generate the greatest possible economic and social benefits from its harvest and utilization over time." Plan objectives include:

1. Attain optimum yield over time.
2. Maintain a spawning potential ratio of at least 20% to minimize the possibility of recruitment failure.
3. Promote conservation of the stocks to reduce inter-annual variation in availability and to increase yield per recruit.
4. Promote collection of economic, social, and biological data required to effectively monitor and assess management efforts relative to the overall goal.
5. Promote research that improves understanding of the biology and fisheries of spotted seatrout.
6. Promote harmonious use of the resource among various components of the fishery through coordination of management efforts among the various political entities having jurisdiction over the spotted seatrout resource.
7. Promote determination and adoption of standards of environmental quality and provide habitat protection necessary for the maximum natural protection of spotted seatrout.

The Omnibus Amendment added the following objectives to support compliance under the Act:

1. Manage the spotted seatrout fishery by restricting catch to mature individuals.
2. Manage the spotted seatrout stock to maintain sufficiently high spawning stock biomass.
3. Develop research priorities that will further refine the spotted seatrout management program to maximize the biological, social, and economic benefits derived from the population.

Management measures include a minimum size limit of 12 inches in total length (TL), with comparable mesh size regulations in directed fisheries, and data collection for stock assessments and monitoring of the fishery. All states with a declared interest in spotted seatrout (NJ-FL) have implemented, at a minimum, the recommended minimum size limit. In addition, each state has either initiated spotted seatrout data collection programs or modified other programs to collect improved catch and effort data. Table 1 provides the states' recreational and commercial regulations for spotted seatrout through 2021.

II. Status of the Stock

A coastwide stock assessment of spotted seatrout has not been conducted, given the largely non-migratory nature of the species and the lack of data on migration where it does occur. Instead, state-specific age-structured analyses of local stocks have been performed by several states. These stock assessments provide estimates of static spawning potential ratio (SPR), a measure of the effect of fishing pressure on the relative spawning power of the female stock. The FMP recommends a goal of 20% SPR. South Carolina and Georgia have adopted this goal while North Carolina and Florida have established a 30% and 35% SPR goal, respectively.

A peer-reviewed stock assessment of spotted seatrout in Virginia and North Carolina waters was completed in 2014, incorporating data from 1991-2013 (NCDMF 2014). Results suggest the age structure of this stock expanded during the last decade; however, there was a sharp decline in recruitment after 2010. Similarly, spawning stock biomass (SSB) declined after a peak in 2007. These declines may be attributed to cold stun events. In 2012, SSB exceeded the currently defined threshold, suggesting the stock is not overfished. Additionally, fishing mortality is below the threshold, suggesting the stock is not experiencing overfishing. A benchmark stock assessment for North Carolina and Virginia, incorporating data through February 2020, is currently in progress as of September 2022. The assessment is estimated to be completed in late 2022.

The South Carolina Department of Natural Resources packaged several state-specific assessments into a report in 2001, though these were not peer reviewed. The initial assessment covering 1986-1992 indicated female SPR was just above the 20% goal in the terminal year (Zhao and Wenner 2001), leading to a minimum size limit increase and a creel limit reduction. A more recent assessment was conducted for the period 1981-2004 (de Silva, Draft 2005). Two

modeling approaches were used, and both models indicated the current SSB is below the requirement to maintain 20% SPR.

In an initial assessment by Florida, separate stock assessments were conducted for the northern and southern populations on their Atlantic coast. Average transitional SPR (tSPR) estimates during 2007-2009 were 0.67 in the northern region and 0.45 in the southern region, both above the 35% tSPR target (Murphy et al. 2011), leading to some relaxation in Florida's management of the resource. Florida completed a new statewide assessment in 2018, which in 2019 was updated with data through 2017 (https://myfwc.com/media/26731/seatrout-assessment-summary-2019.pdf; Addis et al. 2018; Muller and Addis 2019). They assessed the status of spotted seatrout populations among management regions in Florida waters using an integrated statistical catch-at-age model, Stock Synthesis, as the primary modeling platform. Spotted seatrout population dynamics were described for the period 1950-2017 utilizing available information on catch, effort, relative abundance, and size/age composition. For the Northeast (Nassau through Flagler counties) and Southeast (Volusia through Miami-Dade counties) management regions along Florida's Atlantic coast, the regional base SS model estimates of current transitional spawning potential ratios ($tSPR_{Current}$, geometric mean for 2015-2017) are 31% in the northeast, and 34% in the southeast region. The $tSPR_{Current}$ values for the two Atlantic coast regions were found to be below the Commission's 35% $tSPR_{Current}$ management target. These assessment results led to changes in spotted seatrout regulations in Florida, including decreasing bag limits and modifying the slot size limit (Table 1).

III. Status of the Fishery

Spotted seatrout are typically caught both commercially and recreationally from Delaware through the east coast of Florida. In South Carolina, spotted seatrout are declared a gamefish and can only be taken by recreational means. Landings from states north of Delaware are minimal and/or inconsistent from year to year. In 2021, landings ranged as far north as Rhode Island. State catch estimates in this section include those in the management area only (NJ-FL), but coastwide totals include the entire Atlantic coast. Total recreational landings have surpassed total commercial landings every year since recreational landings were first recorded in 1981 (Figure 1). Spotted seatrout, particularly in Virginia-South Carolina, are susceptible to cold stuns that result in sporadic, large amounts of winter mortality, which can lead to sudden declines in harvest. The last cold stun occurred in 2018, prompting in-season changes to management in affected states.

Commercial Fishery

Commercial harvest statistics were obtained from the Atlantic Coastal Cooperative Statistics Program (ACCSP) for years prior to 2021 and from state compliance reports for 2021. Atlantic coast commercial landings (1950-2021) range from 157,000 pounds in 2001 to 2.3 million pounds in 1952 (Figure 1). Historically, commercial landings primarily came from Virginia, North Carolina, and Florida, with Maryland, South Carolina, Georgia, and occasional landings Delaware and north accounting for a small portion. From 1950 to 1976, annual commercial landings averaged 1.3 million pounds, followed by a decline due to increased regulations and

possible declines in abundance. Significant changes to regulations include the 1987 designation of spotted seatrout as a gamefish in South Carolina, and the 1995 prohibition on the use of entangling nets in Florida's coastal waters. From 2012 to 2021, commercial landings averaged approximately 424,866 pounds. In 2021, commercial landings totaled 762,443 pounds, a 17% increase from 2020 and the highest value since 1995 (Table 2). North Carolina, Virginia, and Florida accounted for 91%, 7%, and 2% of the total commercial landings, respectively.

Recreational Fishery

Recreational harvest statistics were obtained from the Marine Recreational Information Program (MRIP) for years prior to 2021 and from state compliance reports for 2021. These landings have been updated to reflect the calibration and transition to the mail-based Fishing Effort Survey. Over the last 41 years, recreational catch of spotted seatrout (kept and released) has shown an upward trend, increasing from 4.3 million fish in 1981 to 31.2 million fish in 2018. In 2021, recreational catch totaled 22.0 million fish, a 5% decrease from 2020 (Figure 2). Recreational harvest has remained stable throughout the time series with an average of 4.1 million fish over the last five years. Recreational harvest in 2021 was 6.0 million pounds or 3.7 million fish (Tables 3 and 4), with North Carolina (33%), Georgia (25%), and Florida (17%) responsible for the largest shares in numbers of fish. Due in part to recreational size and creel limits and closed seasons, as well as the encouragement of catch and release practices, the percentage of caught fish being released has increased throughout the time series, with the previous 10-year average (2011-2020) at 83%. The percent of fish released in 2021 (83%) was slightly higher than 2020 (80%; Figure 2, Table 5). The number of fish released has averaged 18.7 million fish in the last 10 years (2012-2021), with 18.4 million fish released in 2021. Rod and reel is the primary recreational gear, but some spotted seatrout are taken by recreational nets and gigging, where these methods are permitted. Most recreational fishing is conducted from private boats and the majority of the catch is taken from nearshore waters.

IV. Status of Assessment Advice

A coastwide stock assessment of spotted seatrout has not been conducted and the Plan Review Team (PRT) does not recommend that one be completed due to the life history of the fish and the availability of data. Several states have performed age-structured analyses on local stocks, and recent assessments provide divergent trends on the status of the species. The 2005 stock assessment in South Carolina indicated an increasing population trend but a status level that is still below target spawning stock biomass levels (de Silva 2005). The 2014 North Carolina and Virginia stock assessment showed declines in recruitment since 2010, and indicated overfishing wasn't occurring and that the stock was not overfished. For the Northeast and Southeast management regions along Florida's Atlantic coast, the regional base SS model estimates of current transitional spawning potential ratios are 31% in the northeast, and 34% in the southeast region. The $tSPR_{Current}$ values for the two Atlantic coast regions were found to be below the Commission's 35% $tSPR_{Current}$ management target (Muller and Addis 2019). The transitional spawning potential ratio for the spotted seatrout stock in northeast Florida was below the management target and in southeast Florida, it was just below or at the management target. The PRT supports the continuation of state-specific assessments, yet

recognizes the difficulty most states face to attain sufficient data of assessment quality and personnel who can perform the necessary modeling exercises.

The lack of biological and fisheries data for effective assessment and management of the resource was recognized in the 1984 FMP and continues to be a hindrance. Some states are increasing their collection of biological and fisheries data, which will provide insight on stock status over time.

V. Status of Research and Monitoring

In addition to commercial and recreational fishery-dependent data collected and/or compiled through the NMFS Fisheries Statistics Division, some states have implemented fishery-independent or additional fishery-dependent monitoring programs. States currently conducting fishery dependent sampling include Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida. Delaware, Maryland, North Carolina, South Carolina, Georgia, and Florida currently conduct fishery independent surveys for spotted seatrout or run surveys encountering spotted seatrout. Virginia, North Carolina, and South Carolina conduct aging, and in 2021 the NCDMF aging lab aged a total of 1,002 spotted seatrout by otoliths with a maximum age of 6 and a modal age of 1. In 2021, Virginia aged 304 spotted seatrout, with a modal age of 1.

VI. Status of Management Measures and Issues

Changes to State Regulations

Virginia had a minor change in regulations in September 2021 to establish an incidental catch of 50 pounds of trout per license holder per day or a total boat limit of 100 pounds per day per vessel once the quota of 51,104 pounds is caught.

De Minimis Requests

A state qualifies for *de minimis* status if its previous three-year average combined commercial and recreational catch is less than 1% of the previous three-year average coastwide combined commercial and recreational catch. Those states that qualify for *de minimis* are not required to implement any monitoring requirements, as none are included in the plan.

The states of Delaware and New Jersey request continuation of *de minimis* status, and the PRT notes they meet the requirements of *de minimis*.

VII. Implementation of FMP Compliance Requirements for 2021

The PRT found no inconsistences in relation to the FMP compliance requirements among state compliance reports.

VIII. Recommendations of Plan Review Team

<u>Management and Regulatory Recommendations</u>

- Consider approval of *de minimis* request by New Jersey and Delaware.

Prioritized Research Recommendations

- The PRT recommends focusing on addressing important missing components to improve state specific stock assessments. Specific focal areas include the development or improvement of state specific abundance indices, particularly for juvenile abundance indices, research into fecundity and recruitment relationships, and additional research into B2 releases due to a rise in popularity of the catch and release fishery.
- Consider trigger factors to allow for a swift management response to environmental events that have been shown to heavily impact spotted seatrout. An example is a temperature trigger in North Carolina to protect spotted seatrout that have had long-term exposure to cold temperatures. Additional research into links between spotted seatrout population dynamics and life history variability in response to environmental factors such as land use patterns, climate change, etc.

IX. References

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X. Figures

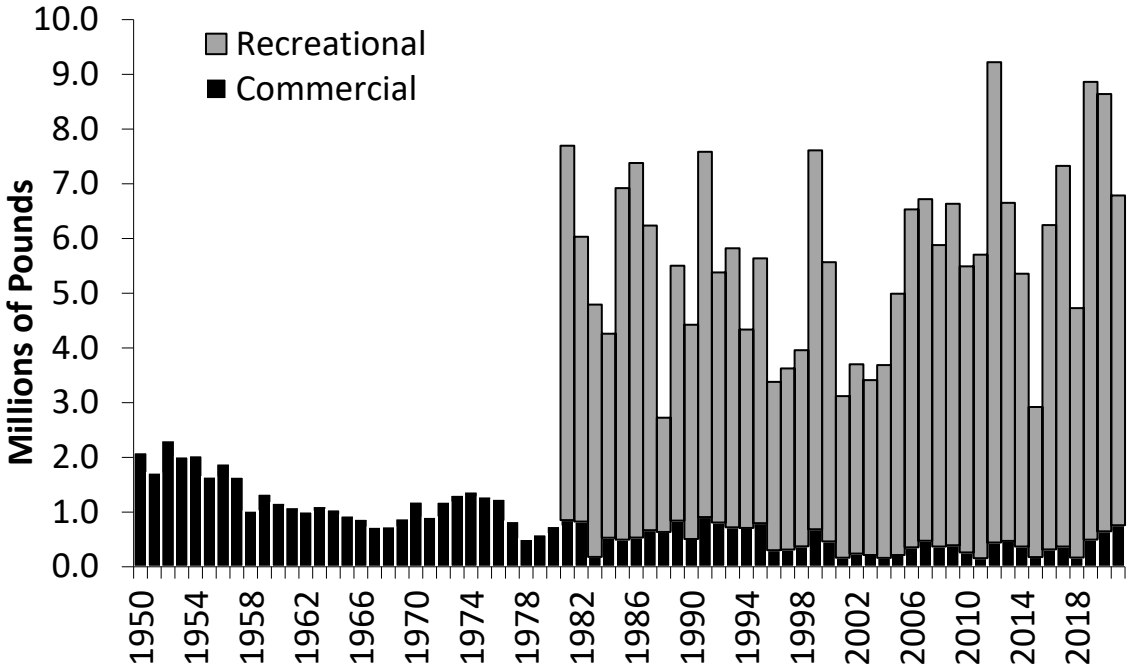

Figure 1. Coastwide commercial landings (1950-2021) and recreational landings (1981-2021), in pounds (See Tables 2 and 4 for values and sources). Recreational data not available prior to 1981.

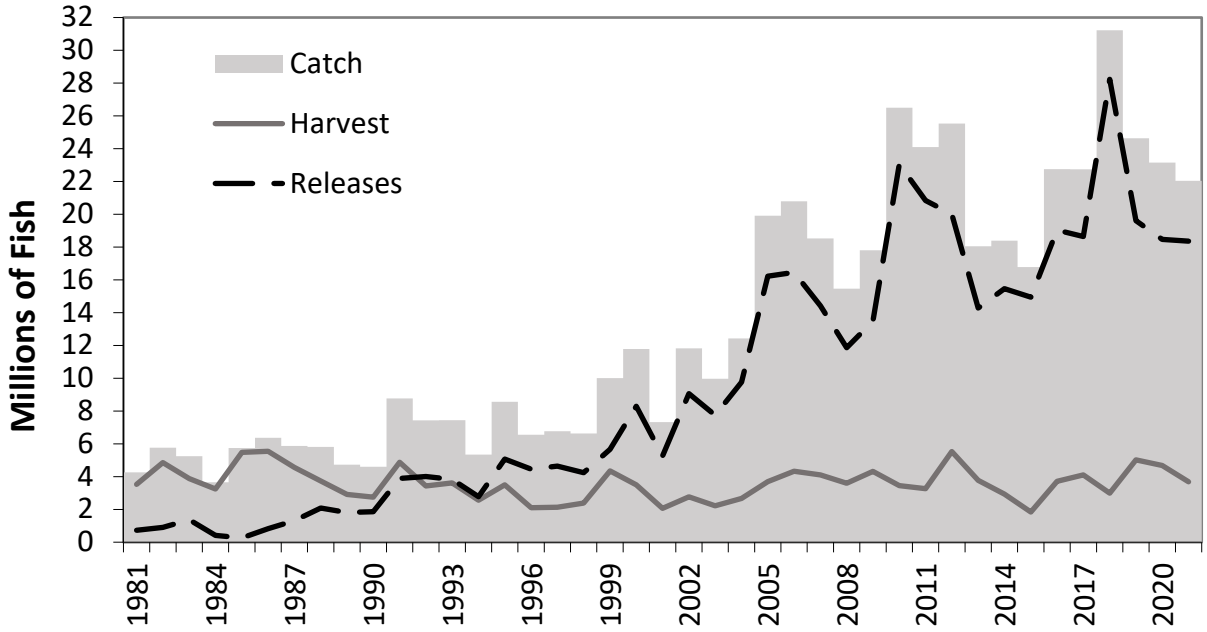

Figure 2. Coastwide recreational catch, harvest, and releases (numbers), 1981-2021 (See Tables 3 and 5 for values and sources).

XI. Tables

Table 1. Summary of state regulations for spotted seatrout in 2021.

State	Recreational	Commercial
New Jersey	13” TL; 1 fish	13” TL; 100 lbs/vessel/day during open seasons 100 lbs bycatch allowance during closed season if equal lbs of other species are also harvested. Gill net: 3.25 in minimum mesh size; closed season from 5/21-9/2 and 10/20-10/26. Otter trawl: 3.75 in minimum diamond stretched mesh size or 3.375 in stretched square mesh; closed season 8/1 to 10/12 Pound net: closed season 6/7 to 6/30 Hook and line: must follow recreational bag and size limit
Delaware	12" TL	12" TL
Maryland	14" TL; 4 fish	14" TL. 150 lbs limit per day or trip (whichever is longer). Trawl and gill net mesh size restrictions.
PRFC	14" TL; 10 fish	14" TL
Virginia	14-24" TL; 1 fish >24” allowed; 5 fish	14" TL; pound nets/seines allowed 5% by weight less than 14". Hook & line fishermen must follow rec limits. Quota: 51,104 lbs (Sept-Aug). After it’s been announced the quota has been reached, then daily incidental catch of 50 lbs/licensee aboard the vessel, not to exceed 100 lbs per vessel
North Carolina	14" TL; 4 fish	14" TL; 75 fish limit. Unlawful to possess or sell Friday 12:00am-Sunday 12:00am.
South Carolina	14" TL; 10 fish. Gig March-Nov.	Gamefish status since 1987; native caught fish may not be sold.
Georgia	14" TL; 15 fish	14" TL; 15 fish. BRD requirement for trawl; gear mesh regulations.
Florida	15-19" TL slot; 1 fish >19" allowed per vessel, or per person if fishing on land; 0 captain and crew bag limit on for-hire trip; hook & line/cast net only. Western Panhandle: 3 fish, closed February; Big Bend: 5 fish; South: 3 fish; Central East: 2 fish, closed Nov -Dec; Northeast: 5 fish	Hook & line/cast net only; 15-24" TL; Season varies by region; 50 fish per person per day or 100 fish vessel limit with two or more licensed fishermen on board South, Big Bend, and Western Panhandle: Open June 1 - October 31. Central East: Open May 1 - September 30. Northeast: Open June 1 - November 30.

Note: A commercial fishing license is required to possess spotted seatrout for sale in all states with a fishery.

Table 2. Commercial landings (pounds) of spotted seatrout by state, 2012-2021 (Source: ACCSP for years prior to 2021 and State Compliance Reports for 2021). Totals are for the coastwide fishery and may extend beyond the management unit. "C" represents confidential data.

Year	MD	VA	NC	SC	GA	FL	Total
2012	C	116,767	265,016	C	C	61,676	443,747
2013	C	42,086	367,610	C	C	58,288	471,243
2014	C	90,051	242,245	C	C	37,710	370,110
2015	C	7,888	128,752	C	C	39,226	175,931
2016	C	18,483	254,590	C	C	23,105	296,419
2017	C	55,219	299,910	C	C	16,194	371,590
2018	C	17,526	128,980	C	C	22,105	173,651
2019	C	100,763	378,491	C	C	16,700	531,010
2020	C	67,794	568,764	C	C	12,591	650,034
2021	C	51,594	694,784	C	C	12,352	762,443

Table 3. Recreational harvest (A + B1; numbers of fish) of spotted seatrout using the FES effort calibration, by state, 2012-2021 (Source: MRIP). Totals are for the coastwide fishery and may extend beyond the management unit.

Year	DE	MD	VA	NC	SC	GA	FL	Total
2012		21,323	392,484	1,602,836	622,205	1,206,654	1,682,942	5,528,444
2013	5,436		153,706	1,107,957	440,751	937,046	1,122,151	3,767,047
2014	3,514	21,560	84,537	725,086	260,321	724,411	1,111,177	2,930,606
2015	39	11,619	23,062	249,260	311,106	740,932	504,137	1,840,155
2016	12	10,092	163,529	978,624	311,168	1,290,220	962,946	3,717,042
2017		24,255	172,288	1,217,834	647,679	1,060,493	977,797	4,100,346
2018	344		189,537	449,473	175,191	1,096,602	929,155	2,993,485
2019	4,644	36,314	596,428	1,937,250	813,548	1,008,284	620,337	5,016,805
2020	774	11,951	591,624	2,053,354	511,261	830,771	678,934	4,678,669
2021		17,664	399,529	1,223,508	483,046	935,052	621,389	3,680,188

Table 4. Recreational harvest (A + B1; pounds of fish) of spotted seatrout using the FES effort calibration, by state, 2012-2021 (Source: MRIP). Totals are for the coastwide fishery and may extend beyond the management unit.

Year	DE	MD	VA	NC	SC	GA	FL	Total
2012		36,380	690,821	2,720,028	1,002,364	1,231,246	3,097,576	8,778,415
2013	8,866		379,399	1,881,881	717,402	1,125,802	2,075,929	6,180,413
2014	6,295	46,870	166,182	1,451,592	382,155	825,903	2,111,818	4,984,520
2015	10	23,546	48,477	430,579	462,498	794,861	984,940	2,744,901
2016	8	20,024	341,977	1,724,492	475,749	1,740,513	1,625,597	5,928,352
2017		48,624	342,463	2,157,198	992,938	1,403,646	2,011,777	6,956,646
2018	248		226,786	658,555	414,442	1,556,782	1,701,275	4,557,840
2019	10,878	61,935	1,256,916	3,334,163	1,238,834	1,440,368	1,033,847	8,366,063
2020	790	28,170	1,375,062	3,632,315	713,197	1,196,591	1,045,536	7,990,871
2021		40,801	815,724	2,241,421	696,038	1,277,168	956,682	6,027,834

Table 5. Recreational releases (number of fish) of spotted seatrout using the FES effort calibration, by state, 2012-2021 (Source: MRIP). Totals are for the coastwide fishery and may extend beyond the management unit.

Year	DE	MD	VA	NC	SC	GA	FL	Total
2012	3,879	259,437	1,257,157	4,916,356	1,761,694	2,196,920	9,610,576	20,006,019
2013	8,039	22,780	738,474	4,278,671	2,190,796	1,320,699	5,722,715	14,282,174
2014	2,926	74,250	1,059,287	3,949,284	1,407,310	1,687,540	7,279,660	15,460,257
2015	604	242,150	834,028	4,824,088	1,147,982	1,763,638	6,131,007	14,943,497
2016	15,066	133,223	3,708,969	6,475,193	1,791,072	2,113,253	4,783,644	19,035,843
2017	71	107,611	3,154,997	5,147,567	1,949,554	2,436,867	5,845,559	18,641,985
2018		54,795	4,455,420	15,245,249	1,062,769	2,022,125	5,306,034	28,230,566
2019	5,905	334,805	2,865,887	7,161,183	2,476,659	2,673,432	4,098,551	19,643,063
2020	9,027	237,023	2,830,854	6,155,571	1,301,634	2,632,036	5,306,269	18,471,640
2021		84,300	3,035,971	6,284,614	1,467,051	3,022,516	4,467,598	18,362,050